

A NEW GENUS OF FLEA BEETLES (COLEOPTERA: CHRYSOMELIDAE)
FROM THE SOUTH OF BRAZIL

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Abstract.—*Deciplatus*, a new genus of Monoplatina with two new species (*D. jundiaiensis* and *D. nigrilus*), from the south of Brazil is described and illustrated. *Deciplatus* is compared to *Ulrica* Scherer and *Laselva* Furth. Use of the name Monoplatina is clarified.

Key Words: Alticini, new species, Parana, PROFAUPAR

Brazil is known, in part, for its high animal and plant species richness, with 9.5% of all species worldwide. However, some estimates indicate that in Brazil there may be seven times more species than currently listed (Lewinsohn and Prado 2005). The flea beetles (Coleoptera: Chrysomelidae: Alticini) constitute one of the megadiverse taxa, with at least 11,000 species and about 600 genera worldwide (Konstantinov et al. 2009). Their higher classification is not well understood; however, one taxon, the subtribe Monoplatina with 45 valid genera, is well recognized and is differentiated by a number of features, including the following: pronotum nearly rectangular with base much narrower than base of elytra, metatibia laterally flattened and dorsally canaliculate and with metatarsus attached subapically, third metatarsomere usually not wider than second, fourth metatarsomere glo-

bosely swollen, metafemora much larger than in most other flea beetle genera, and elytron with seven or nine elytral striae (Scherer 1983). Most flea beetles, including Monoplatina, have 11 antennomeres. The only exceptions are the cosmopolitan genus *Psylliodes* Latreille and the Neotropical *Monotalla* Bechyné with 10 antennomeres, and the Oriental genus *Nonarthra* and the Caribbean genus *Kiskeya* Konstantinov and Chamorro-Lacayo with nine antennomeres. Among specimens recently collected in southern Brazil, two monoplatine species with 10 antennomeres representing a previously unknown genus were discovered. They are described below.

It has been suggested that *Monoplatus* Clark, 1860, the type genus of Monoplatina, is synonymous with *Sphaeronychus* Dejean, 1836 (Monrós and Bechyné 1956). Indeed, *Monoplatus* and *Sphaeronychus* are mentioned on the same page of the Dejean Catalog (Dejean 1836: 383); however, Dejean included only two

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unavailable species names in *Monoplatatus*, which makes it a nomen nudum. *Sphaeronychus* is validated by the citation of *Altica melanurus* Olivier (Dejean 1836). Clark (1860) provided descriptions and illustrations of several species of *Monoplatatus* and therefore made it available. Since *Monoplatatus* and *Sphaeronychus* are congeneric, *Sphaeronychus* is the senior synonym and thus the name to use. This prompted Furth (2007) to suggest that the name of the family level taxon, Monoplatini, is no longer available. Instead he suggested that "Monoplatini/Shaeironychini" should be used (Furth 2007). According to the rules of Zoological Nomenclature (International Commission on Zoological Nomenclature 1999: Article 40), synonymy of the name of the type genus of the family level taxon does not affect the name of this taxon. Therefore, Monoplatina is valid and is the only name that should be used.

MATERIAL AND METHODS

Adults were collected by the project Levantamento da Fauna Entomológica no Estado do Paraná – PROFAUPAR in two localities. One is on the Monte Verde Farm in Jundiaí do Sul (23°26'S, 50°16'W), and the other is on the Estância Santa Clara in Guarapuava (25°40'S, 52°01'W). Jundiaí do Sul is located on the second plateau in the north of Paraná at 500 m above sea level. The region is dominated by the Stational Semidecidual Forest, and the area is considered transitional between premontane wet tropical forest and premontane dry tropical forest, rich in epiphytes and palms, mainly *Euterpe edulis*. Guarapuava is located on the third plateau in the south of Paraná at 740 m above sea level. The region is a transition between Ombrofila Mista Forest and Stational Semidecidual Forest, with *Araucaria angustifolia* (Bert.) O. Kuntze being the major species, especially in higher regions. More detailed

information about the areas may be found in Marinoni and Dutra (1993).

Dissecting techniques and terminology used in the description follow Konstantinov (1998). Specimens are deposited in the Coleção de Entomologia Pe. J. S. Moure Departamento of Zoology, Universidade Federal do Paraná, Brazil (DZUP) and the National Museum of Natural History, Smithsonian Institution, Washington DC, USA (USNM).

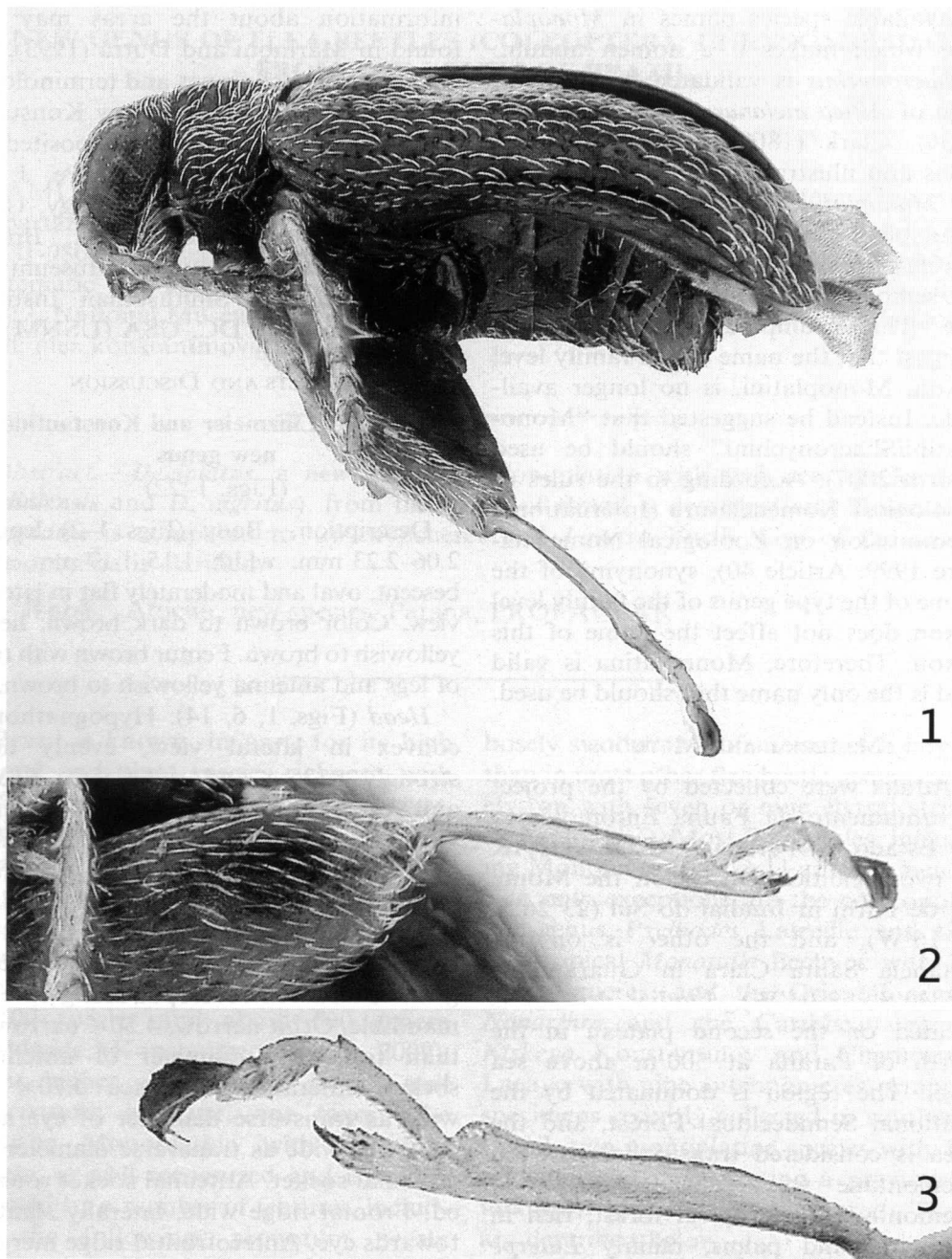
RESULTS AND DISCUSSION

Deciplatus Linzmeier and Konstantinov, new genus

(Figs. 1–22)

Description.—Body (Figs. 1–2) length 2.06–2.23 mm, width 1.15–1.17 mm, pubescent, oval and moderately flat in lateral view. Color brown to dark brown; head yellowish to brown. Femur brown with rest of legs and antenna yellowish to brown.

Head (Figs. 1, 6, 14): Hypognathous, convex in lateral view, evenly and strongly rugose and pubescent. Frons and vertex forming convex line in lateral view. Supraorbital pore indistinguishable. Antennal callus almost indistinguishable. Midfrontal, supracallinal and supraorbital sulci absent. Suprafrontal and supraantennal sulci shallow. Subgenal suture well developed along base of mandible. Orbit narrow, $4.50\times$ narrower than transverse diameter of antennal socket. Interantennal space $0.70\times$ as wide as transverse diameter of eye and $2.00\times$ as wide as transverse diameter of antennal socket. Antennal socket rounded. Frontal ridge wide, laterally slanted towards eye. Anterofrontal ridge merged with frontal ridge forming denticle in middle. Eyes large, inner margin straight. Labrum notched in middle, with four setiferous pores. First maxillary palpomere as wide as long, twice as wide as second and third. Second maxillary palpomere as long as third. Third maxillary palpomere conical. Labial palpo-



Figs. 1-3. *Deciplatus jundiaiensis*. 1, Adult male. 2, Metathoracic leg (outer view). 3, Metatibia (inner view).

meres of equal length, third conical. Antenna with 10 antennomeres, filiform. Antennomere three thinnest (Fig. 5).

Thorax: Pronotum (Figs. 5, 13) $2.45\times$ wider than long, shortest in middle.

Pronotal disc raised in shape of inverted triangle with two shallow impressions running obliquely on its sides from base to apex. Anterior margin weakly rounded. Lateral margin subparallel, weakly

explained. Posterior margin nearly straight. Anterolateral callosity swollen, weakly and evenly rounded, bearing seta and not forming denticle posteriorly. Posterolateral callosity absent. Scutellum triangular, pubescent. Prosternal surface densely covered with irregular punctures. Prosternal intercoxal process extended posteriorly beyond coxa and truncate posteriorly. Posterior end about twice as wide as middle. Procoxal cavities open posteriorly. Mesosternum shorter than prosternal process, quadrate, rugose and pilose, straight posteriorly. Metasternum smooth and pilose, convex in lateral view, as long as pro- and mesosterna together. Posterior margin with sharp notch.

Elytral surface punctate (Figs. 1, 4, 13), with punctures forming nine striae (not counting marginal and short justascutellar striae), densely pilose. Humeral and basal calli well developed, epipleura wide, nearly vertical, narrowing at elytral apex but not reaching it. Elytral apex narrowly truncate.

Fore- and midlegs with femora slightly dilated and tibiae subcylindrical, somewhat enlarged towards apical edge (Figs. 1, 16); pubescence sparsely distributed. Metafemur greatly enlarged, $1.90\times$ longer than wide and $1.34\times$ longer than metatibia. Metatibia straight in lateral view, curved in dorsal view. Outer lateral dorsal ridge with apical third sinuate and with numerous denticles. Inner lateral dorsal ridge more strongly sinuose than outer and with some denticles (Figs. 2-3, 16). Metatibial spur well developed. First metatarsomere inserted preapically and longer than two subsequent tarsomeres together. Claw appendiculate.

Abdomen: Pubescent, with 5 visible ventrites; ventrite V with distinct sexual dimorphism: males with small salient lobe located centrally on posterior margin and perpendicular line; females with last ventrite evenly conical at apex. Posterior margin of fourth ventrite concave (Fig. 15). Apical tergite without

groove in middle (Figs. 7, 17). Rectum of female with elongate structure as long as half of tignum consisting of three main parts, each with large number of sclerotized rods (Fig. 20).

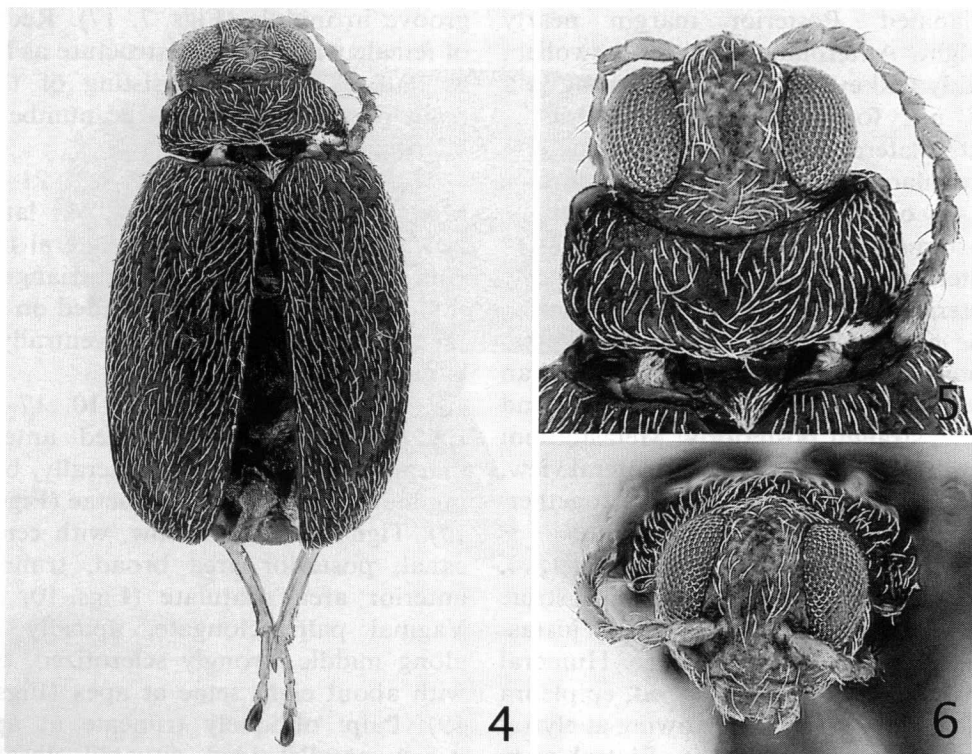
Male genitalia (Figs. 11-12, 21-22): Median lobe simple, convex in lateral view; in ventral view, with lateral margins almost parallel, apex subtriangular, slightly protruding, and rounded on top. Basal part long and bent ventrally in lateral view.

Female genitalia (Figs. 7-10, 17-20): Eighth tergite with rounded anterior margin, more sclerotized laterally, bearing many moderately long setae (Figs. 7, 17). Tignum long, narrow, with central canal; posterior area broad, truncate; anterior area spatulate (Figs. 10, 20). Vaginal palpi elongate, apically and along middle strongly sclerotized, each with about eight setae at apex (Figs. 9, 19). Palpi obliquely truncate at apex, nearly parallel-sided, situated close together and merged anteriorly for more than half of their length. Spermatheca curved, with receptacle and pump not differentiated from each other (pump wider than receptacle). Apex of pump with flattened projection. Spermathecal duct long, forming coils (Figs. 8, 18).

Type species.—*Deciplatus jundiaiensis* Linzmeier and Konstantinov, new species

Etymology.—The genus name (masculine) is formed by two words, *decem* referring to 10 antennomeres and *platus* referring to its placement in Monoplatina.

Remarks.—*Deciplatus* is different from all other known genera of Monoplatina in having 10 antennomeres instead of 11 and a very short pronotum ($2.45\times$ wider than long). In other Monoplatina (except *Laselva* Furth) the pronotum is nearly as long as wide or even longer. For example, in *Hypolampsis annulicornis* Jacoby it is $0.83\times$ as wide as long. *Deciplatus* is most similar to *Ulricea* Scherer. They share the following characters: head without most sulci but with shallow suprafrontal and



Figs. 4-6. *Deciplatus jundiaiensis*. 4, Adult male. 5, Head and pronotum. 6, Head.

supraorbital sulci, eyes large, wide frontal ridge merging with anterofrontal ridge producing small denticle in middle, and metatarsus inserted subapically. *Deciplatus* can be easily differentiated from *Ulrica* by the following characters: antennae with 10 antennomeres (*Ulrica* has 11); pronotum flat in lateral view, short ($2.45\times$ wider than long) (*Ulrica minutus* Jacoby, the type species of the genus, has the pronotum convex and $1.32\times$ wider than long); rectum with elongate sclerotization (absent in *Ulrica*); and receptacle of spermatheca narrower than pump (as wide as pump in *Ulrica*).

Deciplatus is similar to *Laselva* in the proportions of the pronotum and the subapical attachment of the metatarsus; however, it can be immediately differentiated by the 10 antennomeres (*Laselva* has 11).

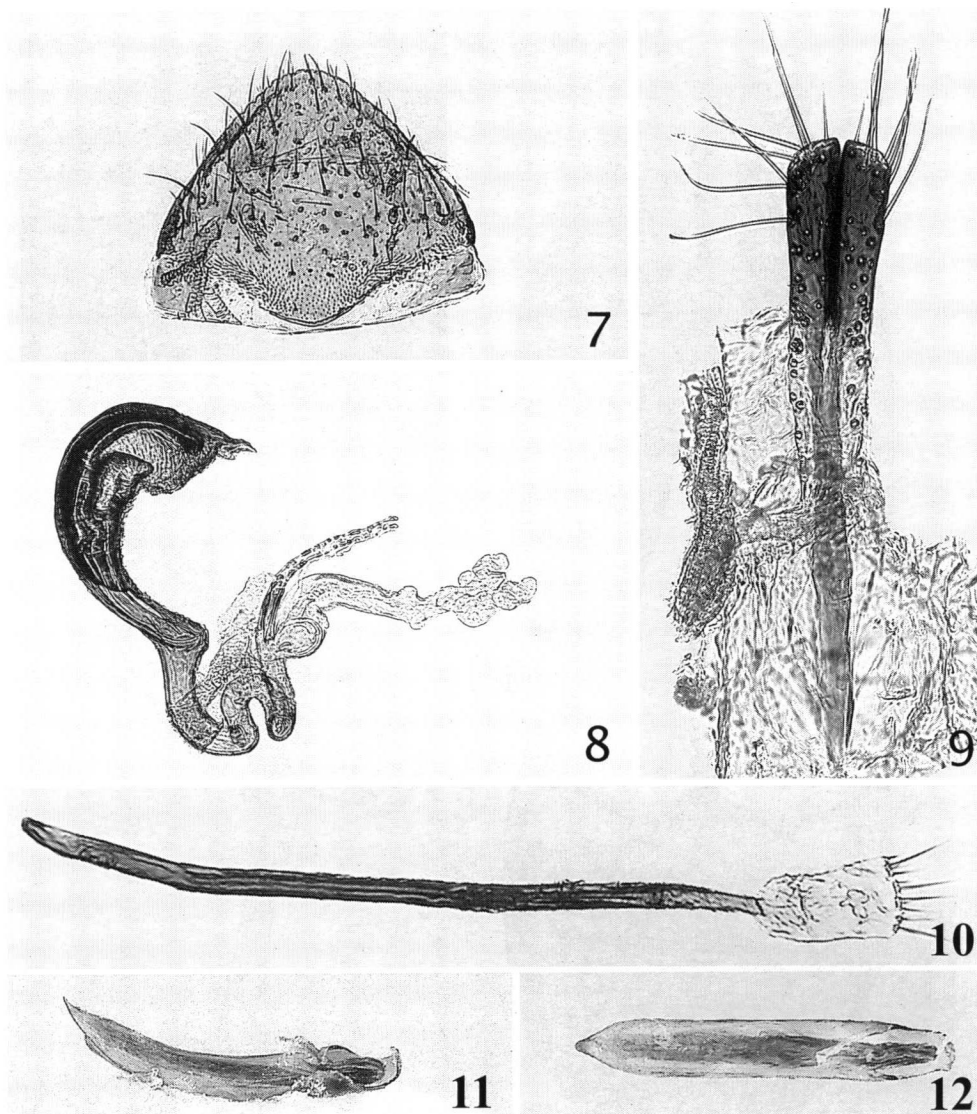
A sclerotized elongate rod-shaped structure was found in the rectums of

females of both species (Fig. 20). It appears to consist of a number of longitudinal rods; however, its function and the details of rod arrangement need further study. We have never seen this kind of structure before in the rectum of a flea beetle. Rectums of female cryptocephaline leaf beetles (Cryptocephalinae) contain a so called rectal apparatus (Erber 1988) which functions to produce fecal plates which are used to cover the egg. It consists of several transverse sclerotized plates that surround the rectum (Erber 1988) and looks very different than the rods in *Deciplatus*.

***Deciplatus jundiaiensis* Linzmeier and
Konstantinov, new species**

(Figs. 1-12)

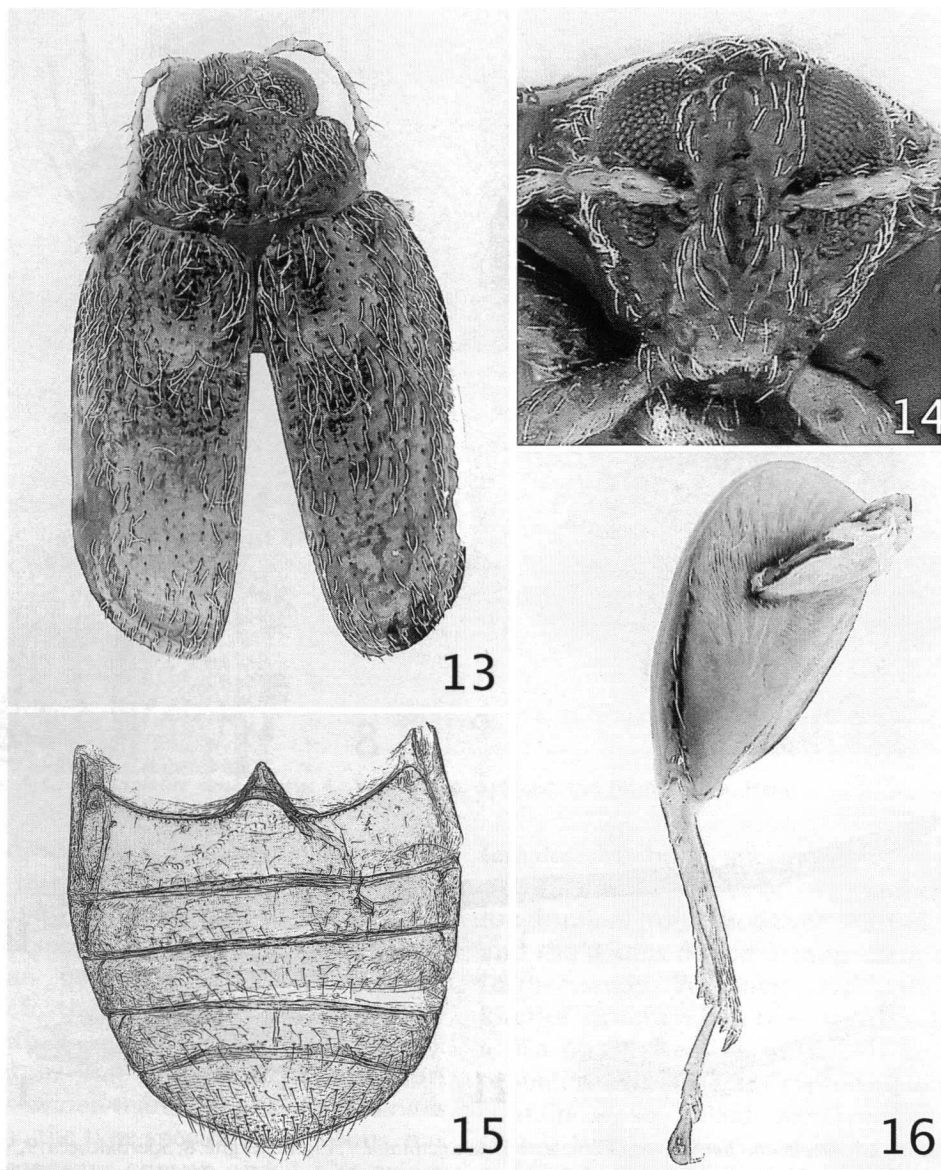
Description.—Body (Figs. 1, 4) length 2.06–2.13 mm, width 1.15–1.16 mm, pubescent, oval and moderately flat in



Figs. 7-12. *Deciplus jundiaiensis*. Female and male genitalia. 7, Eighth tergite. 8, Spermatheca. 9, Vaginal palpi. 10, Tignum. 11, Median lobe of aedeagus, lateral view. 12, Median lobe of aedeagus, ventral view.

lateral view. Color brown to dark brown and head yellowish. Femur brown, rest of legs and antenna yellowish. Head with suprafrontal sulci as long as transverse diameter of antennal socket. Outer lateral dorsal ridge of metatibia with apical third sinuous and with 10 denticles. Metatibial spur flat at apex with two small denticles laterally. Dorsal sclerite of aedeagus covering apical orifice narrow (Fig. 12). Eighth tergite triangular,

with rounded anterior margin, bearing some moderately long setae (Fig. 7). Tignum long, narrow; posterior area almost $2.00\times$ longer than wide, truncate, with few setae; anterior area weakly spatulate (Fig. 10). Vaginal palpi almost straight at apex, with outer margin rounded (Fig. 9). Spermatheca curved, gradually widening from receptacle to pump. Base of duct as wide as base of receptacle. Base of gland elongate. Mem-

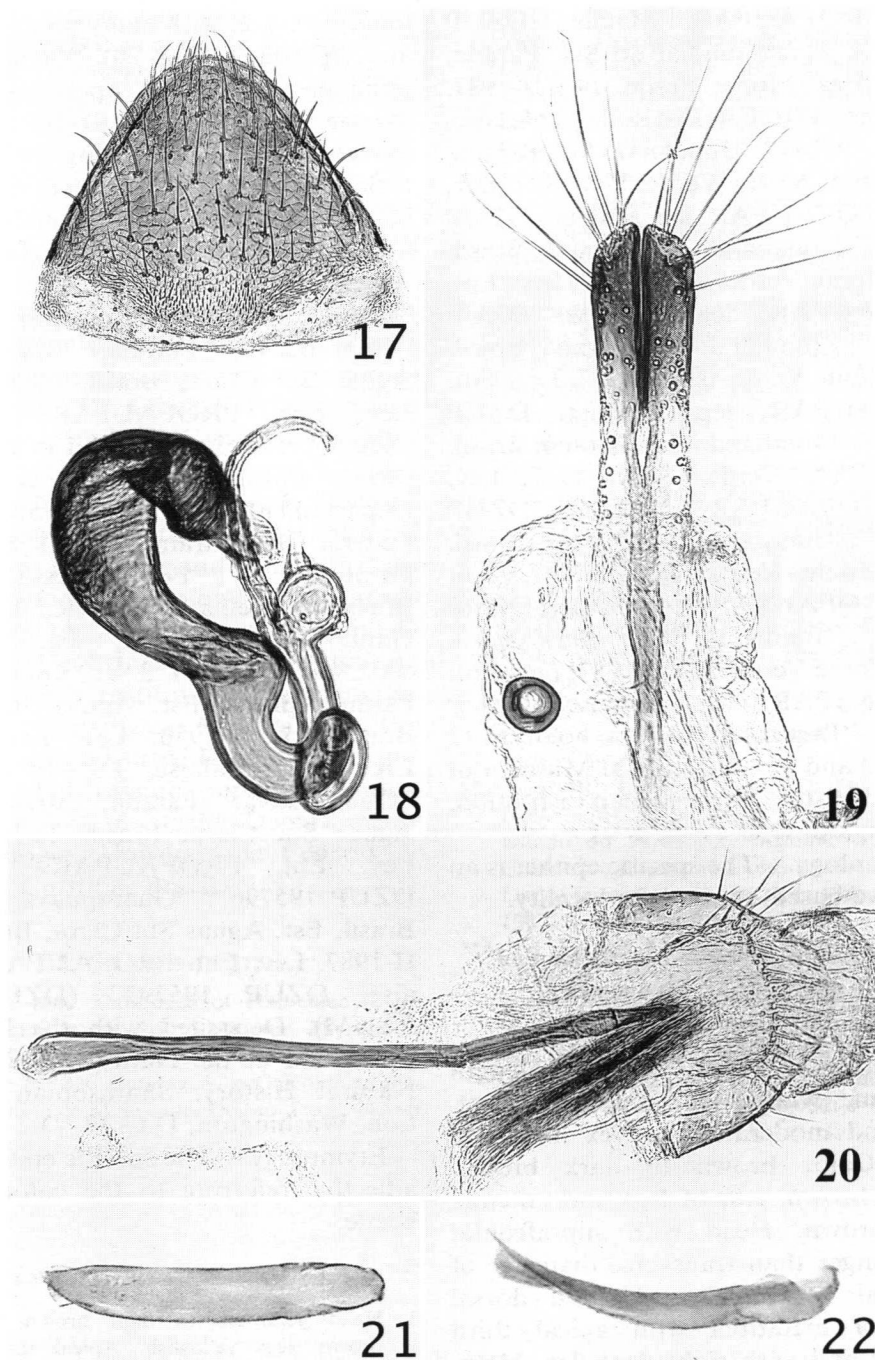


Figs. 13–16. *Deciplatus nigritus*. 13, Adult female. 14, Head. 15, Abdomen, ventral view. 16, Metathoracic leg.

branous part of gland wider than duct (Fig. 8).

Type material.—*Holotype*: ♂, “Jundiaí do Sul, Paraná, Brasil, Faz. Monte Verde, 11-I-1988, Lev. Ent. PROFAUPAR, leg, Malaise, DZUP 195783.” Deposited in the Coleção de Entomologia Pe. J. S. Moure, Departamento of Zoology, Universidade Federal do

Paraná, Brazil (DZUP). *Paratypes*: 3 ♂, “Jundiaí do Sul, Paraná, Brasil, Faz. Monte Verde, 15-XII-1986, Lev. Ent. PROFAUPAR, leg, Malaise, DZUP 195784”; “Jundiaí do Sul, Paraná, Brasil, Faz. Monte Verde, Brasil, 04-I-1988, Lev. Ent. PROFAUPAR, Malaise, DZUP 195785”; “Jundiaí do Sul, Paraná, Brasil, Faz. Monte Verde, Brasil, 04-I-1988, Lev.



Figs. 17–20. *Deciplatus nigritus*. Female and male genitalia. 17, Eighth tergite. 18, Spermatheca. 19, Vaginal palpi. 20, Tignum. 21, Median lobe of aedeagus, ventral view. 22, Median lobe of aedeagus, lateral view.

Ent. PROFAUPAR, Malaise, DZUP 195786"; 7 ♀, "Jundiaí do Sul, Paraná, Brasil, Faz. Monte Verde, 14-XII-1987, Lev. Ent. PROFAUPAR, leg, Malaise, DZUP 195787"; "Jundiaí do Sul, Paraná, Brasil, Faz. Monte Verde, 12-I-1987, Lev. Ent. PROFAUPAR, leg, Malaise, DZUP 195788"; "Jundiaí do Sul, Paraná, Brasil, Faz. Monte Verde, 16-II-1987, Lev. Ent. PROFAUPAR, leg, Malaise, DZUP 195789"; "Jundiaí do Sul, Paraná, Brasil, Faz. Monte Verde, 09-XI-1987, Lev. Ent. PROFAUPAR, leg, Malaise, DZUP 195790"; "Jundiaí do Sul, Paraná, Brasil, Faz. Monte Verde, 14-XII-1987, Lev. Ent. PROFAUPAR, leg, Malaise, DZUP 195791"; "Jundiaí do Sul, Paraná, Brasil, Faz. Monte Verde, 21-XII-1987, Lev. Ent. PROFAUPAR, leg, Malaise, DZUP 195792"; "Jundiaí do Sul, Paraná, Brasil, Faz. Monte Verde, 16-XI-1987, Lev. Ent. PROFAUPAR, leg, Malaise, DZUP 195793." Deposited with the holotype (2 ♂; 4 ♀) and at the National Museum of Natural History, Smithsonian Institution, Washington, D.C. (1 ♂; 3 ♀).

Etymology.—The specific epithet is an adjective based on the type locality.

***Deciplatus nigrinus* Linzmeier and
Konstantinov, new species**
(Figs. 13–22)

Description.—Body (Fig. 13) length 2.23 mm, width 1.17 mm, pubescent, oval and moderately convex in lateral view. Color brown to dark brown. Femur brown, rest of legs and antenna light brown. Head with suprafrontal sulci longer than transverse diameter of antennal socket. Outer lateral dorsal ridge of metatibia with apical third sinuous and with eight denticles. Metatibial spur acute at apex. Dorsal sclerite of aedeagus covering apical orifice wide (Fig. 21). Eighth tergite with rounded anterior margin, bearing many moderately long setae (Fig. 17). Tignum long, narrow; posterior area 1.60× wider than

long, truncate, with many setae; anterior area spatulate (Fig. 20). Vaginal palpi obliquely truncate at apex, with outer margin rounded (Fig. 19). Spermatheca curved, gradually widening from receptacle to pump. Base of duct wider than base of receptacle. Base of gland spherical. Membranous part of gland narrower than duct (Fig. 18).

Type material.—*Holotype*: 1 ♂, "Guarapuava, Paraná, Brasil, Est. Águas Sta Clara, Brasil, 29-XII-1986, Lev. Ent. PROFAUPAR, Malaise, DZUP 195794." Deposited in the Coleção de Entomologia Pe. J. S. Moure, Departamento of Zoology, Universidade Federal do Paraná, Brazil (DZUP). *Paratypes*: 1 ♀, "Ponta Grossa, Paraná, Brasil, V. Velha – IAPAR, 03-I-2000, Ganho & Marinoni, leg, Malaise, c002.848" (DZUP). 3 ♀: "Guarapuava, Paraná, Brasil, Est. Águas Sta Clara, Brasil, 15-XII-1986, Lev. Ent. PROFAUPAR, Malaise, DZUP 195795"; "Guarapuava, Paraná, Brasil, Est. Águas Sta Clara, Brasil, 22-XII-1986, Lev. Ent. PROFAUPAR, Malaise, DZUP 195796"; "Guarapuava, Paraná, Brasil, Est. Águas Sta Clara, Brasil, 16-II-1987, Lev. Ent. PROFAUPAR, Malaise, DZUP 195797" (DZUP and USNM). Deposited with the holotype (2 ♀) and at the National Museum of Natural History, Smithsonian Institution, Washington, D.C. (2 ♀).

Etymology.—The specific epithet is an adjective referring to the color of the beetle.

KEY TO SPECIES OF *DECIPLATUS*

1. Head yellowish to light brown, body brown, legs yellowish. Apical third of metatibia with 10 denticles on outer lateral dorsal ridge. Metatibial spur truncate at apex with two small denticles laterally. Dorsal sclerite of aedeagus covering apical orifice narrow. Posterior area of tignum almost 2.00× longer than wide. Base of spermathecal gland elongate
.....*Deciplatus jundiaiensis* new species

- Head and body dark brown, legs light brown. Apical third of metatibia with eight denticles on outer lateral dorsal ridge. Metatibial spur acute at apex. Dorsal sclerite of aedeagus covering apical orifice wide. Posterior area of tignum $1.60\times$ wider than long. Base of spermathecal gland spherical . . . *Deciplatus nigritus* new species

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